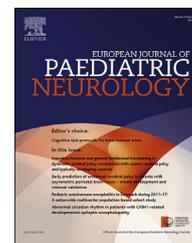




Official Journal of the European Paediatric Neurology Society



## Editorial

# Treadmill therapy in cerebral palsy



The achievement of walking is one of the most prominent milestones of the developing child and for most children with cerebral palsy, the achievement or improvement of walking is one of the most important therapy goals. This underlines the relevance of the study of Weinberger et al. in this edition, which is innovative in at least three aspects. First, the therapy with robot-enhanced repetitive gait therapy may be regarded not only as a highly sophisticated method but also as a way to give a “high dosage” of gait therapy to children with impaired walking abilities. The authors provide data about the effect of three week-blocks with 12 single sessions of 30–60 min per day with 20 children for two years. To achieve this dosage of gait therapy, children with cerebral palsy GMFCS II-III need significant support, and robot-enhancing, combining an exoskeleton with a body weight support system, is an effective way to do so. The second aspect is the way evidence is achieved. The authors compare the observed improvement with longitudinal trajectories of motor development in a cohort of 650 children with cerebral palsy, achieved by a Canadian working group.<sup>1</sup> The authors discuss the limitation of this method in detail: there might be regional differences in health care, and the cohort was recruited over ten years ago. However, the study of Weinberger et al. has evaluated a time period of 21 months and it will be difficult to design controlled studies for such a long period. This brings us to the third point: the way patients are treated over time. To enhance the effects of basic physiotherapy with two to three week blocs of intensive ambulatory gait therapy and to repeat these within a two year period improves the integration into daily living activity. This might be the reason why therapy effects are not getting lost after one session but are still present at the beginning of the next therapy bloc. Furthermore, therapy blocs take place during a period of developmental progress. Bloc therapy over a two year period might help children with cerebral palsy to transfer this developmental progress into improvement of walking abilities.

There is an ongoing controversy about evidence for effectiveness of physiotherapy in cerebral palsy. Comparing therapy effects with percentiles and longitudinal trajectories of cohort studies may be a way to improve evidence in this field,

and a recent study of the same Canadian group<sup>2</sup> may even offer further opportunities in this field. The study by Weinberger et al. in this edition contributes to the evidence for the effectiveness of treadmill training in children with cerebral palsy, on a neurophysiological level we have shown that treadmill therapy is improving reflex modulation towards a normal pattern,<sup>3</sup> and an AACPDM review concludes that there is a “promising evidence”.<sup>4</sup> It is time to ask: when does treadmill therapy become a standard therapy in cerebral palsy?

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<https://doi.org/10.1016/j.ejpn.2019.06.007>

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